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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,969	03/19/2004	Ashok Burton Tripathi	STI-PAUS0001	6472
58937 7590 02/21/2007 WOLFF LAW OFFICE, PLLC 209 PROVIDENCE RD. CHAPEL HILL, NC 27514			EXAMINER TRINH, SONNY	
			ART UNIT	PAPER NUMBER
			2618	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/21/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/803,969

Applicant(s)

TRIPATHI, ASHOK BURTON

Examiner

Sonny TRINH

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 18-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 18-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Current Status:*

1. This Office Action is in response to the amendment filed 11/20/06. Claims 1-14, 18-47 are pending. Claims 15-17 are canceled.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-14, 18-43 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 3-5, 12, 25-26, 29, 38** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **Claims 3, 12, 25, 29, and 38** recite the step of "...cooled to a temperature equal to or below the maximum upper limit for high temperature superconductors..." which is not disclosed in the specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 46** provides for the use of the cryo-cooled system module, the cryogenically cooled amplifier, a heat sink, and a control board, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 46 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-2, 18, 31, 40-45, 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingswood et al. (hereinafter "Kingswood"; U.S. Patent Number 6,584,303).

Regarding **claim 1**, Kingswood discloses a wireless communication system comprising: a receiver front end having a first set of components and configured so that the receiver front end may be upgraded to a second set of components (abstract, column 1 lines 17-40, figures 3-4, column 4 line 13 to column 5 line 43). Kingswood does not explicitly disclose a housing for containing these components but it would have been obvious and well within the level of a person of ordinary skill in the art to put all of these components in a housing to protect these electrical components from weather and from vandalism.

Regarding **claim 2**, Kingswood further discloses that the second set of components includes at least one other component of the first set of components (column 1 lines 17-40, such as when more traffic is needed, a second or third transceiver can be used).

Regarding **claim 18**, this claim specifies the base station as opposed to the wireless communication system in claim and is therefore rejected for the same reasons. Note that the wireless communication system disclosed by Kingswood is also a base station (column 1 lines 17-40).

Regarding **claim 31**, Kingswood discloses a wireless communication system comprising: a receiver front end having a first set of components and configured so that the receiver front end may be upgraded to a second set of receiver front end signal

components (abstract, column 1 lines 17-40, figures 3-4, column 4 line 13 to column 5 line 43). Kingswood does not explicitly disclose a housing for containing these components and the oversized relative area needed to accommodate the first set of front end signal components so as to provide an additional volume for allowing the receiver front end to be upgraded. However, it would have been obvious and well within the level of a person of ordinary skill in the art to put all of these components in a housing to protect these electrical components from weather and from vandalism and the size of the housing to accommodate additional components are well within the level of a person of ordinary skill in the art.

Regarding claims 40-41, Kingswood discloses the invention but does not disclose that the total volume of the housing is approximately equal to or greater than 8064 cubic inches, nor the housing is three dimensional and at least two of three dimensions of the housing is approximately equal to or greater than 24 inches. It would have been an obvious matter of design choice to size the housing according to the requirement, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Regarding claims 42-43, these claim merely reflect the method claim as opposed to the apparatus claim of claim 1 and is therefore rejected for the same reasons.

Regarding claim 44, this claim merely reflects the method claim as opposed to the apparatus claim of claim 31 and is therefore rejected for the same reasons.

Regarding **claim 45**, Kingswood discloses the invention but does not disclose the steps of removing and inserting (upgrading) components, however, these steps are routine functions when upgrading a system and are obvious to the person of ordinary skill in the art.

Regarding **claim 47**, Kingswood discloses the invention but does not disclose that the housing includes two or more other housings integrated into a single housing enclosure that houses all components. It would have been obvious to one having ordinary skill in the art that the time the invention was made to integrate different components into one, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art.

6. **Claims 6-11, 13-14, 19-24, 27-28, 30, 32-37, 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingswood in view of Hershtig (U.S. Patent Number 6.212.404 B1).

Regarding **claim 6**, Kingswood discloses the invention but does not disclose that the second set of components includes a cryogenic cooler, a heat sink, and a control board.

In an analogous art, Hershtig teaches a method for implementing cryogenic filters in wireless communication systems (abstract, background of the invention). Hershtig further teaches the use of a cryogenic cooler (figure 13, please see column 6 lines 32-61), a heat sink (column 9 lines 30-40).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to incorporate, the cryogenic cooler, as taught by Hershtig, to the system of Kingswood. The motivation for doing so would be to reduce heat for a better / reliable transceiver in a telecommunication systems.

The combination of Kingswood and Hershtig does not explicitly disclose a control board. However, the control board to mount circuitry to control a particular function is well known and would have been obvious and well within the level of a person of ordinary skill in the art. The motivation for having a control board is for its modularity and for the ease of replacing it if it malfunctions.

Regarding **claim 7**, Hershtig further discloses that the second set of components includes one or more high temperature superconductor components (column 10 line 9 to column 11 line 12).

Regarding **claim 8**, Hershtig further discloses that the temperature superconductor components includes at least one high temperature superconductor filter (see table in column 14).

Regarding **claim 9**, Hershtig further discloses that the second set of components includes at least one cryogenically cooled amplifier (figure 13) and at least one high temperature superconductor filter (see table in column 14).

Regarding **claims 10, 27**, Kingswood further discloses that the second set of components includes a subset of the first set of components (such as transceiver, column 1, lines 17-39).



Regarding **claims 11, 28**, the combination of Kingswood and Hershtig discloses the invention but does not explicitly disclose that the first set of components and the second set of components include a dual duplexer configured to provide one or more duplexed channels.

However, it would have been obvious and well within the level of a person of ordinary skill in the art at the time the invention was made to incorporate a duplexer so that components in the transmit path are packaged and/or shared with those components in the receive path. The number of duplexed channels is also well within the level of a person of ordinary skill in the art, depending on the requirement of the system.

Regarding **claim 13**, Hershtig further discloses a base station wherein the receiver front end is a component coupled to the base station (see for example figure 13 and description).

Regarding **claims 14, 30**, (referring to figure 3 of Kingswood), it is inherent that the housing is a single enclosure for housing the receiver front end components, having three dimensions of sufficient size to accommodate at least a portion of the first set of components and all of the additional components added that make up the second set of components (please see figure 3 and its description).

Regarding **claim 19**, Hershtig further discloses that the first component is a low noise amplifier (figure 13, LNA 4).

Regarding **claim 20**, Kingswood further discloses that the second component includes a plurality of components mounted to the housing (figure 3).

Regarding **claim 21**, Hershtig further discloses that the second component includes one or more cryogenically cooled components (figure 13, cooler 21).

Regarding **claims 22-23**, Hershtig further discloses that the cryogenically cooled components includes at least one cryogenically cooled amplifier such as a low noise amplifier (figure 13, LNA 4).

Regarding **claim 24**, Hershtig further discloses that the second component is further configured to provide greater channel selectivity than the first component (figure 13, column 6 lines 22-41).

Regarding **claim 32**, Hershtig further discloses that the second set of components is configured to provide greater received signal sensitivity than the first set of components (figure 13, column 6 lines 22-61).

Regarding **claim 33**, Hershtig further discloses that the second set of components includes one or more cryogenically cooled components (figure 13, cryogenic refrigeration unit 21).

Regarding **claims 34-35**, Hershtig further discloses that the one or more cryogenically cooled components includes at least one cryogenically cooled amplifier such as the low noise amplifier (figure 13, LNA 4).

Regarding **claim 36**, Hershtig further discloses that the second set of components is configured to provide greater channel selectivity than the first set of components (figure 13, column 6 lines 22-41).

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Regarding **claim 37**, Hershtig further discloses that the second set of components includes one or more high temperature superconductor components (column 10 line 9 to column 11 line 12).

Regarding **claim 39**, Hershtig further discloses that the second set of components includes a subset of the first set of components (figure 13, see description).

### **CONCLUSION**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonny TRINH whose telephone number is 571-272-7927. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed URBAN can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SONNY TRINH  
PRIMARY EXAMINER

2/15/07